DOCUMENT RESUME

ED 255 758 CE 041 306

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TITLE The Ecology of Older Adult Locus of Control, Mindlessness, and Self-Esteem: A Review of Research and Educational Implications.
PUB DATE 3 Apr 85
NOTE 30p.; Paper presented at the Annual Meeting of the American Educational Research Association (69th, Chicago, IL, April 3, 1985).
PUB TYPE Speeches/Conference Papers (150) -- Information Analyses (070)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Adjustment (to Environment); Adult Counseling; Adult Education; Gerontology; Individual Needs; Individual Power; Intervention; Literature Reviews; *Locus of Control; Nursing Homes; *Older Adults; Personal Autonomy; *Personality Traits; *Psychological Needs; Psychological Studies; Research Utilization; *Self Concept

ABSTRACT

A review of research literature pertaining to locus of control in older adults and its application to social and educational settings indicates that reliable generalizations about the self-concept of older adults require a careful consideration of both personal and situational variables. Four separate processes are useful in understanding the formation of the self-concept in older adults: self-attribution, reflected appraisal, social comparison, and identification. Research relating personality factors to locus of control suggests that loss of control is often associated with feelings of helplessness and with physical decline and can even lead to learned helplessness. Mindlessness is another attribute frequently associated with age and occurs when cognitive activity is habitually and automatically reduced. Research on cognitive and noncognitive interventions and educational outcomes, although not conclusive, does suggest that intervention with respect to cognitive performance in elderly individuals can be facilitated through training. Forms of therapy that provide adults with some sort of responsibility (such as horticulture or pet therapy) seem effective as well. One area that seems particularly promising is that of gerontological counseling. (MN)

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THE ECOLOGY OF OLDER ADULT LOCUS OF CONTROL, MINDLESSNESS, AND SELF-ESTEEM: A REVIEW OF RESEARCH AND EDUCATIONAL IMPLICATIONS

A paper presented at the 1985 Annual Meeting of the
American Educational Research Association
Chicago, Illinois
April 3, 1985

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Locus of control, as a construct referring to the perceived ability of individuals to influence outcomes as a direct result of actions on their part, has been well documented as a crucial factor in older adult life satisfaction, self esteem and adaptability (Gerrard, Reznikoff, and Riklan, 1982; Kuypers, 1971; Reid, Haas and Hawkins, 1977; Schulz, 1980).[1] Moreover, it is often the perception of such control rather than the actual exercize of it that is crucial (Langer, 1981). The important role of locus of control has been found to hold true across populations and situations and has been found to be especially important to institutionalized older adults (Schulz, 1980; Reid, Haas and Hawkins, 1977). Although research designed to investigate the nature of locus of control and the elderly has been optimistic as to benefits (Langer and Rodin, 1976; Schulz, 1976), follow-up studies have sometimes found that the achieved benefits for the elderly were lost after the conclusion of the research experience (Schulz, 1980). These findings warrant careful consideration prior to application of locus of control research to social and educational practices. The purpose of this paper is to review the research literature on locus of control and its application to social and educational settings.

It is important to keep in mind that reliable generalizations about the self concept of older adults require a careful consideration of both personal and situational variables. This is particularly true for our understanding of locus of control in older adults. It is a common observation that some older adults have rather positive self concepts

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[1]For an extensive evaluation of the concept, see David L. Palenzuela, "Critical Evaluation of Locus of Control: Towards a Reconceptualization of the Construct and its Measurement," Psychological Reports, 1984, 54, 638-709.

while others do not. Some older adults adapt rather well to their situations; others do not. This documented variation in individual behavior and personality cannot, in our judgment, be best explained by exclusive preoccupation with either personality or situational factors.

Before considering the situational environmental and personality factors related to locus of control in the elderly, we should briefly summarize the status of research on the personality of older adults. The accepted and documented generalization about older adult personality is that of stability throughout adulthood and into old age (Neugarten, 1977; Lowenthal, 1977; Baltes and Willis, 1977; Cooper and Goethals, 1981; Fozard and Thomas, 1975). That is, characteristics seen during youth are more than likely to be seen in later adulthood as well. Despite this general recognition of stability, there has been an undercurrent of opinion that there are certain changes in older adults which, unfortunately, have a negative flavor. For example, some studies suggest that the elderly are more rigid, less flexible, less energetic and spontaneous, and more introverted than younger people (Fozard and Thomas, 1975; Birren, 1974). While it is not our purpose in this paper to provide a detailed review of this literature on personality in older adults, nonetheless, the critique of these findings is of import for our analysis of locus of control. The studies which have offered generalizations about negative change in older adult personality have been subjected to serious criticisms:

1) In the first place, it is not altogether clear whether this research was actually measuring consistencies in personality over time or consistencies in behavior due to situational factors. For example, the finding that the elderly are less

energetic and spontaneous could well reflect their participation in fewer contexts conducive to energetic or spontaneous responses rather than to a change in their personalities.

2) Second, much of this research (in particular, cross-sectional studies) proposing personality change have serious methodological problems. For example, the cross-sectional finding that older adults are presumably more rigid than younger adults (Botwinick, 1973), does not take into account the possibility of cohort effects. That is, older adults and younger adults measured at any given year may have very different educational backgrounds and socialization experiences. Are the presumed differences (in this case, rigidity) between these older and younger adults due to real differences in personality or to differences in education and socialization?

Environmental and Situational Factors Related to Locus of Control

While it may be the case that individual differences in the adaptation of older adults do indeed reflect differences in personality and coping style (Havighurst, 1968), there are also differences in the circumstances and situation of older adults which may have a profound impact on their adaptation in the later years. One of the more prominent such factors is the extent to which older adults remain in the same or similar environments as they have experienced in the past (Lazard and Thomas, 1975; Pastalon, 1983). Environmental and situational factors, though frequently discounted in comparison to personality factors, can be critical to successful aging in that circumstances directly affect self concept and locus of control. Cooper and Goethals (1981) have distinguished four separate processes which are useful in

understanding the formation of the self concept in older adults as well as in individuals in other life phases. These four processes are: self-attribution, reflected appraisal, social comparison, and identification.

1) Self-attribution refers to the process of evaluating and judging one's behavior and, therefore, the type of person one is. It is typically the case that our own behavior provides a significant proportion of the information necessary to make such self-judgments (Bem, 1972; Kelley, 1972). A distinction should be made between behavior that is of one's own choice and behavior that results from environmental constraints and, therefore, is not of one's choice (Cooper and Goethals, 1981). For example, a man who stops working by his own choice will view himself differently than a man who was laid off from work because of a factory closing. Behavior that stems from within an individual serves as a basis for assigning attributes that become a part of the self concept, whereas behavior that is a result of outside forces does not (unless the individual fails to make this distinction and wrongly attributes situational developments to some personal success failure). In other words, the combination of behavior and constraining factors enables individuals to distinguish whether their behavior is a real reflection of personal dispositions or characteristics (and, therefore, a part of our self concept) or whether it is primarily a response to a specific situation.

The elderly may be especially susceptible to potentially negative self attribution processes. An important factor in the process of such negative self attributions is that the causes for behavior changes (e.g. retirement) are sometimes quite elusive or unclear to the older adult. For example, changes in behavior that, in fact, result from external

situations or pressures may be erroneously attributed to internal factors (with accompanying changes in self concept). Why or how might individuals make such erraneous attributions? The research on these matters with reference to old adults is rather minimal (Cooper and Goethals, 1981). A common finding of social psychologists who have examined the attribution process in general (and with particular reference to young people) is that people tend to minimize or not to take full advantage of concensus information (Nisbett and Borgida, 1975). That is, many individuals may attribute to themselves experiences and decisions which are brought on primarily by external pressures without carefully or accurately comparing their experience with other people (in similar situations). This failure of some older adults to account for the experiences of others may be exacerbated by the loss of normative reference groups particularly through retirement or the death of friends or spouses.

Perhaps the best example of the danger of negative self attribution processes for older adults is the social phenomena of retirement. For many individuals retirement is far less a matter of personal choice than a requirement of union contract, law, or policy (Shaver, 1979, found that even though retirement is not a matter of free choice, more than 60% of the retired adults sampled believed that their retirement was voluntary). Nevertheless, many people insist on believing that retirement is a result of their own wishes (Cooper and Goethals, 1981). The event of retirement typically creates a need for some self attributions to be made about the causes of this new experience. Although the levels of change will vary with individuals, retirement normally entails significant changes in activity and lifestyle. For many individuals retirement significantly

alters their daily routines and overall life process. For some, work is replaced by substantial leisure time which is welcome. For others, poor health, lack of finances, or lack of job opportunities may force older adults into a more restricted lifestyle. How then, are these new behaviors "attributed" by the older adults? The answer is of course complex and individually-related. As Cooper and Goethals (1981) state:

> . . . much of retirement is forced on an individual by company policy or law. Yet this is often hidden by the carefully elaborated myth of preparing for our own retirement. By convincing ourselves for many years that we are looking forward to retirement and the gold watch that goes with it, the fact that many of us have no choice about retirement is made to vanish. (p. 437).

Furthermore, if one maintains the belief or illusion that retirement is voluntary, then it follows that the experiences that happen during retirement are also freely chosen. Since free choice is presumably (or in this case, erroneously) the guiding force, then internal attributions may be made (changes in the self concept).

In summary, there are several primary reasons why some elderly might jeopardize their self concepts by making inappropriate internal attributions:

a) Such behavior represents an ego defensive posture to avoid the feeling that they have been "put out to pasture"(Shaver, 1979). This posture is consistent with the finding that most individuals (older adults included) prefer to see themselves as "origins" of their own behavior rather than as the "pawns" of external forces (de Charms, 1968; Langer, 1981; Seligman, 1975; Garber and Seligman, 1980).

b) Because of the ambiguity of cues and pressures relating to some major life events such as retirement, the belief, for example,

that "I am worthy or deserving of retirement" merges almost imperceptibly with the belief that "I am willfully choosing to retire."

c) Research on information processing suggests that individuals are very likely to overattribute causation to the most available or conspicuous factors (Tversky and Kahneman, 1974).

> "Of the myriad interwoven events that might lead to retirement and then to restrictions in one's lifestyle, the most available and salient stimulus--even if not the most accurate one--is old age itself. By being the most conspicuous (i.e. salient) explanation, it may also become the most available. The behaviors of the elderly are thus attributed internally to the problem of old age, to ill health, and to lack of creativity" (Cooper and Goethals, 1981, p. 438).

2) A second major process of self-concept formation which is intimately tied to situational/environmental circumstances is <u>reflected appraisal</u> (Cooper and Goethals, 1981). Reflected appraisal is the process of self concept formation which is based on the evaluations and opinions of other people.

That fairly widespread negative stereotypes of older adults are widely held has been a repeatedly documented finding. Such pervasive attitudes are difficult to fight on the personal level, and the task is made even more difficult due to the decline in available reference groups (e.g. friends, spouses, and so on). Labels such as "incompetent" and "obsolete" are sometimes accepted as the roles to be filled.

> "To the extent that we believe the commonly held stereotypes, then we establish social structures that serve to guarantee that those expectations are correct. They are correct because the social structures actually prompt the behaviors that are consistent with those expectations" (Cooper and Goethals, 1981, p. 442).

Although the total picture is quite complex and pressures are subtle, many elderly are caught in a trap. Socially ascribed practices and attitudes may push them to accept a reality that may not be of their own choosing. Self attributions are made that change the self concept--which are in turn supported by wider social belief about elderly persons. Further, as these accepted beliefs are manifested they, in turn, support social conditions and social structures, and the cycles of expectation--attributions spirals on.

3) Social comparison and 4) identification are two closely related processes of self concept development which are of import to older adult self concept and locus of control. Social comparison refers to the process wherein an individual evaluates their behaviors and opinions in comparison to those of relevant others. Identification is the process of emulating or imitating the behaviors of others.

The elderly typically have fewer realistic role models or standard setters to emulate. In many cases, they can only compare themselves to their more able selves in the past or to their own conceptions of what old age means. The expectations one has for oneself in the later years becomes particularly important for the exercise of control and expected outcomes (Langer, 1981).

Personality Factors Related to Locus of Control

It is readily accepted that persons who feel they have control over their lives have a fairly high level of self esteem. Conversely, those who feel they are to be at the mercy of their situations tend to have lower self esteem. For example, the elderly are particularly vulnerable to self-induced dependence. Studies (Benson & Kennelly, 1976; Seligman, 1975; Seligman & Maier, 1976) show that such learned helplessness results

from prior experience with repeated uncontrollable negative outcomes (i.e., one learns to generalize from uncontrollable siturations to situations that may, in fact, be controllable). While experience and common sense would support these contentions, there are important mediating factors. Lefcourt (1982) suggests that, in any consideration of locus of control, the constraints of reality and circumstances must be taken into account. Further, the meaning or desirability of control to a given individual in any given circumstance needs to be a part of the assessment (Lefcourt, 1982; Reid, Haas and Hawkings, 1977). For example, there are often inescapable realities in the lives of older adults which are imposed by physical condition, financial circumstance and inadequate support networks. In some situations it would be pointless or self-destructive to maintain expectations of or hopes for control over patterns of events that have little or no feasible means of developing.

One of the major criticisms of the research literature on locus of control - and related causal attributions - has derived from typical investigative procedures which involve only momentary or brief elicitations of causal explanation. Most causal attributions have been obtained from subjects on tasks that are 2 to 4 minutes in duration (Lefcourt, Hogg, Struthers, and Holmes, 1975). This raises serious questions as to the ecological validity and the reliability of these measures particularly when applied to issues of depression, response to stress, as well as to older adult experiences.

In addition to the problem of reliability, the brief and momentary quality of the typical responses has created another problem. The focus of the research on the momentary nature of <u>states</u> of helplessness, for example, and the emphasis on situational determinants of behavior (rather

than personality determinants) (Miscel, 1968) has resulted in minimal assessment of locus of control (or the related construct of helplessness) as an enduring characteristic of individuals (Lefcourt, 1982).

Another complication of the research literature on locus of control is the inevitable attachment of value judgments to being an "internal" or an "external" (Internality is viewed as "good" whereas externality is "bad"). These value judgments are often inaccurate and, in many cases, dangerous. For example, the older adults who refuse to be helped or consoled because they stubbornly think of themselves as the only ones who can handle a crisis often find themselves miserable, or worse. Likewise, misplaced self-reliance (when one's abilities, in fact, are limited) might certainly be as self-defeating as the individual who withdraws when opportunities for control actually exist.

The elderly, locus of control, and learned helplessness. From a normative perspective, most experts agree that growing old represents some physical and psychological declines although the extent and impact of such declines varies with individuals. Nonetheless, we need to ask what the overall relationship is between such phenomena of aging and older adult locus of control. Considerable correlational and observational evidence suggests that the absence of personal autonomy in older adults may account for many of the negative experiences seen in later adulthood, in general, and among institutionalized elderly, in particular (Schulz, 1976; Schulz, 1978; Schulz and Brenner, 1977). For example, a sense of internal control in the elderly may be positively related to both physical and psychological well-being (Schulz, 1980; Langer and Rodin, 1976; Langer, 1981).

The literature on relocation of the aged strongly suggests that both control and predictability are critical mediators of relocation outcomes (Schulz and Brenner, 1977; Pastalon, 1983). Specifically, Schulz and Brenner (1977) concluded, as follows:

1) The more choice, the older adult has in being relocated, the more positive are the results of relocation.
2) The more predictable the new environment, the more positive the effects of relocating.

Furthermore, Pastalon (1983) found that preparation for relocation, including information and counseling, were related to positive relocation outcomes. Such preparation may, in fact, lead to better predictability.

There is abundant evidence that control and predictability are related to health-related outcomes (Schulz, 1980). This is particularly true for terminal cancer patients and kidney transplant patients (Krantz and Schulz, 1980; Schulz, 1978; McKegney and Lange, 1971; Verwoerdt and Elmore, 1967). For example, the response to both cancer treatments and the likelihood of survival were positively related to the amount of perceived control patients felt they had over their lives. Since most this data, however, is correlational, it is not always clear whether the patient's locus of control is a cause or a result of the person's health status (Schulz, 1980).

Schulz (1976) found that for a sample of institutionalized older adults, the loss of control and reduced environmental predictability were related to feelings of depression/helplessness and to physical decline. The study involved a field experiment in which the older adults were randomly assigned to one of three conditions or groups which were visited by college students or to a fourth group (baseline) who were not so

visited. (The conditions were as follows: 1) Condition #1 (Control)-the older adults could determine both the frequency and duration of the visits; Condition #2 (Predict)-the older adults were told in advance of the frequency and duration of the visits but had no control over either; Condition #3 (Random)-the older adults were visited randomly; Condition #4 (Baseline)-the older adults in this group received no visits by the college students. The amount and quality of the visitation was controlled across all three visitation groups).

A similar study by Langer and Rodin (1976) also involved an intervention designed to encourage elderly residents of a nursing home to be more responsible and in control of their daily affairs. In the experiment, nursing home residents given responsibility for making some decisions and for the care of a plant lived longer and were physically and psychologically healthier than residents who didn't have those responsibilities.[2] Schulz (1980) points out that a "no treatment control group" was not included in this study, and that the results should be viewed with this fact in mind.

With reference to these two experiments, Schulz (1980) notes that long term follow-ups on the results of patient participation differed. Rodin and Langer's follow-up 18 months after their experiment yielded the same results noted above in their original study (Rodin and Langer, 1977). However, Schulz's follow-up at 24, 30, and 42 months later showed that the positive effects reported above in his study were temporary in

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[2]Schulz (1980) notes also that both his 1976 study and that of Langer and Rodin in 1976 had populationsof relatively high socio-economic status. He reports the results of a later investigation (Krantz and Schulz, 1980) which lent support to the contention that the positive effects of perceived control are felt across SES.

nature. In fact, those individuals who showed improvement in psychological and physical health experienced "significant declines" after the termination of the study (Schulz and Hanusa, 1978). In addition, Schulz (1980) suggested that the increased attention paid to the elderly subjects may have been a confounding factor in his investigation of locus of control.

In summary, there appear to be two contradictory findings regarding the long-term participation effects in the Langer and Rodin (1976) and the Schulz (1976) experiments. Effects appear to be relatively long lasting in the Langer experiments and short-lived in the Schulz experiments. How might this descrepancy be explained? As suggested by Schulz (1980), one approach would be to examine both sets of experiments from the perspective of attributional analysis and the learned helplessness theory (Abramson, Seligman, and Teasdale, 1978). According to this theoretical perspective, individuals develop attributions for locus of control on the basis of three primary factors: 1) internal-external attributions (internal attributions are from the individual, external are from the environment); 2) stable-unstable (stable factors are recurrent over time and long-lived, unstable are sporadic and short-lived); 3) global-specific (global factors appear across situations; specific factors are limited or unique to a given situation). Abramson et al. (1978) suggest that each of these three types of causal attribution has specific effects on the individual. Attributions to internal-external factors typically have an influence on self esteem. Attributions made to the stable-unstable factor would be expected to have an impact on the long-term consequences of a particular experience. Finally, attributions made to the global-specific factor would influence

the generalizability of one specific experience to others of a relatively similar nature (Abramson, et al., 1978).

If we apply this theoretical perspective to the findings of Langer and Rodin (1976) and Schultz (1976), it is possible that the Langer intervention encouraged the elderly nursing home residents (in the experimental group) to make all three types of attributions: internal, stable, and global. That is, the communication to the experimental group which strongly emphasized the responsibility of the older adults, probably altered the subjects attributions regarding their ability to control outcomes in their environment. As a consequence the gains in the experimental group lasted over time (Rodin and Langer, 1977).

On the other hand, it is possible that the Schulz (1976) intervention caused the older adults to do the opposite of the subjects in the Langer and Rodin (1976) intervention (i.e., to make external, unstable, and specific attributions). That is, the subjects in the Schulz experimental groups experienced a sense of control that was not long-lived because it was dependent on the presence of an external agent (the experimenter who arranged temporary visits of students). These feelings of control would not be expected to persist once those external agents were removed. In fact, they did not persist.

A closely related and somewhat similar explanation of the differential findings of the Langer-Rodin and the Schulz experiments has to do with the notion of competence. That is, the interventions may not only have differentially affected the perceptions of locus of control but also differentially enhanced feelings of competence. A control-enhancing message was contained in the directions to Langer and Rodin's experimental group which specified that they were responsible for making

decisions affecting their daily lives and, therefore, were competent individuals. On the other hand, the Schulz (1976) intervention did little to encourage change in subject self concept or competence, over time. Older adults may be particularly susceptible to interventions which enhance feelings of competence (Schaie and Schaie, 1977; Kuypers and Bengston, 1973).

A primary question concerns the degree to which various parts of the experience of being elderly (such as the loss of control) are conditions inherent in the aging process or states of being that are virtually imposed through prevailing social attitudes or institutions. An illusion of incompetence, learned helplessness, and self induced dependence may result when prior experience with uncontrollable outcomes are erroneously attributed to a personal inability to control, or when an event happens that is interpreted to give cause for doubt about one's own competence. In terms of environmental or social factors (such as retirement) and/or individual or personal factors (such as declining health and having to let others perform tasks once managed effortlessly) which are typically associated with aging, there is reason for concern.

Mindlessness. Mindlessness is another attribute frequently associated with age and occurs when cognitive activity is habitually and automatically reduced. Langer (1981) contends that mindlessness, or the automatic processing of information, is only recently gaining recognition as a medium of interaction with the environment. That people may function on the basis of cues rather than actual informational content has been repeatedly supported by research (Langer and Abelson, 1972; Langer 1975, 1978a; Langer and Roth, 1975). Mindlessness is thought to be a product of overlearning--where much of the interaction is taken for

granted and assumed to be the same as or similar to past experience.

Langer (1981) has demonstrated that when given the responsibility to attend to matters and remember events, nursing home residents' deficits in those areas could be reduced and possibly reversed. However, Langer suggests that mindlessness will not be employed if one of two circumstances arise: 1) a situation is novel or 2) if an effortful response is necessary. Both situations are those in which the "cues" are inefficient and it is necessary to gear attention to the matter. These are rather startling realizations when it is recalled that we ordinarily assume people are consciously and fully processing information on a continuous basis. We sometimes assume diminished output to be a result of diminished capacity, when in fact it may be simply "mindless" behavior. The consequences of such unwarranted assumptions for the elderly are serious.

Until recently, many researchers in the fields of sociology and psychology have concerned themselves primarily with the role of consciousness (served by controlled information processing) in human behavior and interaction. Comparatively, little attention is given to unconscious mode of behavior, believed to be served by automatic information processing. The automatic process of information, as opposed to conscious information processing, is a reduced level of cognitive activity caused by many repetitions of a particular experience, or in some instances, by a single exposure. The term "mindlessness" is frequently used as a synonym for this automatic processing of information. Mindlessness is considered to have an adaptive function, in that it frees conscious attention to be used elsewhere. However, it can also result in heightened vulnerability to external circumstances.

Unlike younger populations where mindlessness is often adaptive (e.g. to reduce the amount of information in novel situations into a more manageable amount), many of the elderly (especially those in nursing homes) live in the environments that may not be conducive to opportunities for thinking, responsibility, and conscious information processing. In such circumstances "mindlessness" has no positive adaptive function. Indeed, Langer (1981) suggests that premature death may follow when the environment prevents this activity over a prolonged period.

According to Langer (1981) there are two primary ways in which mindlessness works to the disadvantage of the elderly. First, mindlessness can lead to increased vulnerability to interpersonal external influences which affect one's self-competence and self-esteem. Second, individuals regardless of their ages need a minimal amount of active conscious information processing to ensure survival. Unfortunately, many institutionalized elderly are not likely to have even a threshold level of cognitive thinking due to extremely routinized environments. Because of their age and the structure of their environments, such individuals are more likely to experience considerable routinization which leads to routinization. The end result would be much less ongoing active information processing for this group as a whole (Langer, 1981).

As discussed above, a positive relationship has been found between survival and mindfulness (Langer & Rodin, 1976; Schulz, 1976), where a responsibility-encouraged group (i.e., the group was encouraged to make decisions and given plants and other things for which to be responsible) lived longer than the comparison group. A mindlessness explanation and

the loss of perceived control explanation are interdependent in that if a person believes he/she has control over his/her environment, there will be more opportunity for conscious thinking than if one perceives no control. To support this argument, Langer (1981) cites several studies which demonstrate the general tendency of people (not only the elderly) to behave mindlessly in routinized situations (not because they are literally thoughtless) 1) because they are capable of organizing a great deal of the complex social information into structures (schemes) that can be evoked by simple cues; 2) because these coherent units (i.e., chunking of smaller units of information into larger ones) can be overlearned; and 3) because people process only a minimal amount of information to get them through the day, unless the situation is novel or an effortful response is required (Newton, Engquis, and Bois, 1977; Langer and Abelson, 1972; Langer, 1975; Langer and Roth, 1975; Langer, 1978; Miransky and Langer, 1978; Langer, Blank, and Chanowitz, 1978).

These studies support the idea that much of the behavior that people assume to be performed mindfully may instead be enacted rather mindlessly because they process only a minimal amount of information when they are in a routinized environment (with overlearned tasks to be performed). Langer (1981) asserts that the clinical implications and consequences of this medium of engagement with the environment is especially consequential for the elderly, since by virtue of their restricted mobility and their age, they have had more opportunity for repeated experience with their environments, thus, providing more opportunity for more "mindless" experience than their younger counterparts.

While mindless behavior can be adaptive in normal environments, the elderly person in nursing homes are subject to much routinization--so

much so that cognitive activity is pathologically reduced. Such occurances may give an individual cause to attribute typically elderly characteristics to him/her self, and the expectation attribution cycle is back in full swing. A certain degree of mindlessness is inherent in the mastery of skills, and when competence is called into question (such as may occur with reflected appraisal) the components of a task which were previously known mindlessly may be inaccessable for conscious replication. Such may be the case for the elderly in many areas. Research by Langer and Imber (1979) suggests that deficits may be recovered by making the components of a task salient. Thus, decreases in functioning on the part of the elderly may not necessarily be a consequence of aging--but a reminent of mindless functioning.

An implication of mindlessness with the elderly is that society construes such "failings" to be an indication of the need for over thorough care--and as an indication that their presently smothering practices are necessary. Furthermore, the "self fulfilling prophesies initiated by the loss of perceived control, self-induced dependence and mindlessness are only a few of the many ways in which social conditions may foster what may erroneously appear to be necessary consequences of aging" (1981, pp. 276-277).

Research on Cognitive and Noncognitive Interventions and Educational Outcomes

For the most part, there is reasonable concurrence that there are changes in cognition with age as well as cohort differences in adult cognitive ability (Denney, 1982; Denney and Palmer, 1980). Once these age differences are recognized it becomes important to determine if they can be reduced through intervention. The interventions which have

typically been used fall primarily into two groups: 1) cognitive intervention involving direct training or practice in specific skill or ability areas and 2) noncognitive intervention involving the manipulation of such features as motivation. Although locus of control, self esteem, and self concept would certainly fit into the latter intervention category. Surprisingly little research has been done on these characteristics in relation to learning situations of older adults (Denney, 1982). There is, of course, a substantial research literature on many of these factors - cognitive and noncognitive - in relation to child cognitive performance and learning (Lefcourt, 1980). The findings, for the most part, indicate an expected and positive relationship between such noncognitive variables as positive self concept, high levels of self esteem, and high levels of internal locus of control and academic achievement. Likewise, there is some support (although, not always consistent results) for the relationship between such cognitive variables as training/practice, modeling of behaviors (by teachers, peers, or parents), and feedback of results on child cognitive performance (Weiner, 1979; Weiner, Russel, and Lerman, 1979; Lefcourt, 1980).

The research findings on the impact of cognitive and noncognitive interventions for older adults are, as might be expected, less conclusive although there are some reasonably clear directions. With reference to cognitive performance of elderly individuals, intervention for some (though not all tasks) can be facilitated through direct traiing (i.e. telling a subject how or what to perform) (Denney, 1972). The utility of these findings is not always clear due to methodological problems in the studies as well as the limited scope of learning activities examined. Likewise, the effects of practice on adult cognitive performance are not

consistent across tasks (Panicucci, 1975; Hoyer, Hoyer, Treat, and Baltes, 1978). On the other hand, feedback and modeling appear to be particularly effective interventioon techniques (Hornblum and Overton, 1976; Denney 1974).

The research on noncognitive interventions has, for the most part, been based on the assumption that the elderly do not perform up to their ability level because of factors other than the simple cognitive characteristics of a learning situation. For example, these studies appear to suggest that older adults may lack motivation, lack self-confidence, or lack the time to think about or plan appropriate response strategies (i.e. the lack of predictability in a learning situation). Unfortunately, there is very little research on the relationship of such factors to older adult cognitive performance, problem solving skills, or educational outcomes. The few well-designed or well-conceptualized studies do not show any facilitative effects on problem solving or educational achievement (Denney, 1980, 1982). However, it is important to bear in mind that these results do not prove that the manipulation of such variables is unimportant. There are several reasons for this cautious optimism:

1) The relatively small number of studies on noncognitive interventions deal with a limited range of laboratory/cognitive activities.
2) There is need for much more research before any reasonably conclusive judgment can be made.

Practical Applications of Locus of Control Concepts

Langer and Rodin's (1976) research involved some of the principles presently encompassed in what is known as Horticulture therapy. Horticulture therapy has been around since 1945 and is recognized as a valuable activity for the elderly (Olszowy, 1978). "Pet therapy" or "Companion Animal Therapy" has gained recognition recently as another means of engaging successful interaction with the elderly. A British researcher in the 1970's found that elderly ladies who were given parakeets to care for did far better in terms of world outlook than women given begonias (Science, 1984).

In addition to being an outlet for perceived control, pets especially (but plants also) can act as a "social lubricant" fostering interaction and provide an imperative for exercize (Science, 1984). Pets also provide non-judgemental acceptance (to counteract low self esteem) provide tactile contact human caretakers may be reluctant to give (scratch a cat and it purrs!) and provide a purpose to getting up every morning ("If I don't feed the goats no one will"). Responsibility is not unrelated to locus of control. Also animals may present more novel, less cue specific situations--so that mindlessness becomes an inappropriate.

Recent Calls for Change: Signs for Hope

A special interest group of the American Occupational Therapy Association was set up in 1976 specifically geared to Gerontic Occupational Therapy. This special interest group contains more certified occupational therapy assistants than any other, and has as its stated goal "to achieve a person-environment fit that enables the older person to function as competently as possible" (Rogers, 1981, p. 664). The relationship with locus of control is fairly obvious but the need for

greater understanding is underscored.

The profession of Gerontological Counseling is taking shape--and is already confronting/challenging the status quo (Johnson and Stripling, 1984). Again, the need for greater understanding of the needs of the older person is necessary, as opposed to the perpetuations of expectancies alone.

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